AMENDMENT

Please amend the claims of the application as follows:

1. **[Original]** An apparatus for reducing the size of wood chips, said apparatus comprising:

a saw assembly having an array of blades disposed upon a shaft and configured to be driven at a cutting speed in a first rotational direction, said shaft defining a shaft interference zone;

a feeder assembly configured to direct a flow of said wood chips along a feeder path, said feeder path passing into and through said array of blades, said feeder assembly defining a feeder zone at least partially intersecting said array of blades;

a topper assembly positioned proximate said feeder path, said topper assembly located upstream of said saw assembly relative to said feeder path, said topper assembly configured to reduce the height of said flow of said wood chips such that said flow of wood chips does not tend to extend into said shaft interference zone;

said apparatus reducing said wood chips into a plurality of cut chips.

2. **[Original]** The apparatus of claim 1, wherein said saw assembly is positioned such that said shaft interference zone nearly intersects tangentially with said feeder zone.

3. **[Original]** The apparatus of claim 1, wherein said topper assembly is positioned such that said topper zone nearly intersects tangentially with said feeder zone.

4. **[Original]** The apparatus of claim 1, wherein said saw assembly further comprises an array of spacers disposed upon said shaft, said spacers positioned alternately between said array of blades.

5. **[Original]** The apparatus of claim 1, wherein said feeder assembly comprises one or more paddle assemblies configured to be driven along said feeder path at a feeder speed in a direction generally opposing said first rotational direction,

each of said one or more paddle assemblies defining an array of slots therethrough, positioned to accept insertion of said array of blades.

6. **[Original]** The apparatus of claim 5, wherein said one or more paddle assemblies comprise a series of like paddle members.

7. **[Original]** The apparatus of claim 5, wherein said one or more paddle assemblies is disposed upon a drum and said drum is mounted upon a feeder shaft.

8. **[Original]** The apparatus of claim 5, wherein said one or more paddle assemblies is mounted to an endless chain configured to be driven along an endless feeder path about one or more powered rollers, said endless feeder path comprising one or more either straight or curved segments, and said endless path coinciding with said feeder path at least during said flow through said array of blades.

9. **[Original]** The apparatus of claim 5, wherein each of said one or more paddle assemblies comprises:

a scoop portion shaped to cradle said wood chips; and

a fence portion shaped to contain said wood chips during said flow through said array of blades.

10. **[Original]** The apparatus of claim 5, wherein said wood chips comprise generally oblong chips and wherein said one or more paddle assemblies is shaped to align said oblong chips generally transverse to said array of blades in preparation for said flow through said saw assembly.

11. **[Original]** The apparatus of claim 5, wherein said saw assembly generates a wind, and wherein said fence is further shaped to contain said wood chips in opposition generally to said wind.

12. **[Original]** The apparatus of claim 1, wherein said topper assembly comprises:

one or more topper blades disposed upon a shaft and configured to be driven at a topping speed in said first rotational direction.

13. **[Original]** The apparatus of claim 1, further comprising a conveyor assembly providing an incoming flow of said wood chips.

14. **[Original]** The apparatus of claim 1, further comprising:

a chute disposed in an engaged position to guide said flow of said wood chips toward said feeder assembly,

said chute comprising a floor and a lower chute edge.

15. **[Original]** The apparatus of claim 14, wherein said chute further comprises:

a chute actuator configured to move said chute relative to said feeder assembly between said engaged position and a disengaged position, said disengaged position characterized by said chute guiding said wood chips away from said feeder assembly; and

a chute controller operably connected to said chute actuator.

16. **[Original]** The apparatus of claim 15, wherein said chute further comprises:

a chute load sensor positioned along said chute near said flow of wood chips;

said chute load sensor operably connected to said chute controller, said chute load sensor capable of transmitting at least a normal signal and a fault signal.

17. **[Original]** The apparatus of claim 16, wherein said chute load sensor comprises a metal detector, and said fault signal indicates a metal object in said flow of wood chips.

18. **[Original]** The apparatus of claim 15, wherein said chute actuator in response to a fault signal moves said chute into said disengaged position.

19. **[Original]** The apparatus of claim 1, further comprising:

a chute disposed in an engaged position to guide said flow of said wood chips toward said feeder assembly, said chute comprising a floor and a lower chute edge; and

a dam positioned between said chute and said feeder assembly, said dam shaped to urge said wood chips toward said feeder assembly.

20. **[Original]** The apparatus of claim 19, wherein said dam comprises:

an inner face oriented toward said feeder assembly, said inner face shaped to nearly coincide with said feeder zone;

a trailing dam edge; and

a leading dam edge.

21. **[Original]** The apparatus of claim 20, wherein said dam is stationary relative to said feeder assembly and said trailing dam edge nearly meets said lower chute edge when said chute is in said engaged position.

22. **[Original]** The apparatus of claim 20, wherein said one or more paddle assemblies further comprises an outer paddle face and a leading paddle edge, and wherein said dam is positioned such that:

(a) said outer paddle face nearly meets said inner dam face; and

(b) said leading paddle edge nearly meets said leading dam edge.

23. **[Original]** An apparatus for reducing the size of wood chips, comprising:

a saw assembly having an array of blades disposed in spaced-apart relation upon a shaft and configured to be driven at a cutting speed in a first rotational direction, said shaft defining a shaft interference zone;

a feeder assembly configured to direct a flow of said wood chips along a feeder path, said feeder path passing into and through said array of blades, said feeder assembly defining a feeder zone at least partially intersecting said array of blades, wherein said saw assembly is positioned such that said shaft interference zone nearly intersects tangentially with said feeder zone;

a topper assembly positioned proximate said feeder path, said topper assembly located upstream of said saw assembly relative to said feeder path, said topper assembly configured to reduce the height of said flow of said wood chips such that said flow of wood chips does not tend to extend into said shaft interference zone, said topper assembly defining a topper zone, said topper assembly positioned such that said topper zone nearly intersects tangentially with said feeder zone; and

a chute disposed in an engaged position to guide said flow of said wood chips toward said feeder assembly, said chute comprising a floor and a lower chute edge,

said apparatus reducing said wood chips into a plurality of cut chips.

24. **[Original]** The apparatus of claim 23, wherein said feeder assembly comprises one or more paddle assemblies configured to be driven along said feeder path at a feeder speed in a direction generally opposing said first rotational direction,

each of said one or more paddle assemblies defining an array of slots therethrough, positioned to accept insertion of said array of blades.

25. **[Original]** The apparatus of claim 24, wherein said one or more paddle assemblies comprise a series of like paddle members.

26. **[Original]** The apparatus of claim 24, wherein said one or more paddle assemblies is mounted to an endless chain configured to be driven along an endless feeder path about one or more powered rollers, said endless feeder path comprising one or more either straight or curved segments, and said endless path coinciding with said feeder path at least during said flow through said array of blades.

27. **[Original]** The apparatus of claim 24, wherein each of said one or more paddle assemblies comprises:

a scoop portion shaped to cradle said wood chips; and

a fence portion shaped to contain said wood chips during said flow through said array of blades.

28. **[Original]** The apparatus of claim 24, wherein said wood chips comprise generally oblong chips and wherein said one or more paddle assemblies is shaped to align said oblong chips generally transverse to said array of blades in preparation for said flow through said saw assembly.

29. **[Original]** The apparatus of claim 24, wherein said saw assembly generates a wind, and wherein said fence is further shaped to contain said wood chips in opposition generally to said wind.

30. **[Original]** The apparatus of claim 23, wherein said topper assembly comprises:

one or more topper blades disposed upon a shaft and configured to be driven at a topping speed in said first rotational direction.

31. **[Original]** The apparatus of claim 23, further comprising a conveyor assembly providing an incoming flow of said wood chips.

32. **[Original]** The apparatus of claim 23, wherein said chute further comprises:

a chute actuator configured to move said chute relative to said feeder assembly between said engaged position and a disengaged position, said disengaged position characterized by said chute guiding said wood chips away from said feeder assembly;

a chute controller operably connected to said chute actuator; and

a chute load sensor positioned along said chute near said flow of wood chips,

said chute load sensor operably connected to said chute controller, said chute load sensor capable of transmitting at least a normal signal and a fault signal.

33. **[Original]** The apparatus of claim 32, wherein said chute load sensor comprises a metal detector, and said fault signal indicates a metal object in said flow of wood chips.

34. **[Original]** The apparatus of claim 32, wherein said chute actuator in response to a fault signal moves said chute into said disengaged position.

35. **[Original]** The apparatus of claim 23, further comprising:

a dam positioned between said chute and said feeder assembly, said dam shaped to urge said wood chips toward said feeder assembly, said dam comprising:

an inner face oriented toward said feeder assembly, said inner face shaped to nearly coincide with said feeder zone;

a trailing dam edge; and

a leading dam edge.

36. **[Original]** The apparatus of claim 35, wherein said dam is stationary relative to said feeder assembly and said trailing dam edge nearly meets said lower chute edge when said chute is in said engaged position.

37. **[Original]** The apparatus of claim 35, wherein said one or more paddle assemblies further comprises an outer paddle face and a leading paddle edge, and wherein said dam is positioned such that:

(a) said outer paddle face nearly meets said inner dam face; and

(b) said leading paddle edge nearly meets said leading dam edge.

38. **[Original]** An apparatus for reducing the size of wood chips, comprising:

a saw assembly having an array of blades disposed in spaced-apart relation upon a shaft and configured to be driven at a cutting speed in a first rotational direction, said shaft defining a shaft interference zone;

a feeder assembly configured to direct a flow of said wood chips along a feeder path, said feeder path passing into and through said array of blades, said feeder assembly defining a feeder zone at least partially intersecting said array of blades, wherein said saw assembly is positioned such that said shaft interference zone nearly intersects tangentially with said feeder zone;

a topper assembly positioned proximate said feeder path, said topper assembly located upstream of said saw assembly relative to said feeder path, said topper assembly configured to reduce the height of said flow of said wood chips such that said flow of wood chips does not tend to extend into said shaft interference zone, said topper assembly defining a topper zone, said topper assembly positioned such that said topper zone nearly intersects tangentially with said feeder zone; and

a chute disposed in an engaged position to guide said flow of said wood chips toward said feeder assembly, said chute comprising a floor and a lower chute edge; and

a dam positioned between said chute and said feeder assembly, said dam shaped to urge said wood chips toward said feeder assembly, said dam comprising an inner face oriented toward said feeder assembly, said inner face shaped to nearly coincide with said feeder zone, a trailing dam edge, and a leading dam edge,

said apparatus reducing said wood chips into a plurality of cut chips.

39. **[Original]** The apparatus of claim 38, wherein said feeder assembly comprises one or more paddle assemblies configured to be driven along said feeder path at a feeder speed in a direction generally opposing said first rotational direction,

each of said one or more paddle assemblies defining an array of slots therethrough, positioned to accept insertion of said array of blades.

40. **[Original]** The apparatus of claim 39, wherein said one or more paddle assemblies comprise a series of like paddle members.

41. **[Original]** The apparatus of claim 39, wherein said one or more paddle assemblies is mounted to an endless chain configured to be driven along an endless feeder path about one or more powered rollers, said endless feeder path comprising one or more either straight or curved segments, and said endless path coinciding with said feeder path at least during said flow through said array of blades.

42. **[Original]** The apparatus of claim 39, wherein each of said one or more paddle assemblies comprises:

a scoop portion shaped to cradle said wood chips; and

a fence portion shaped to contain said wood chips during said flow through said array of blades.

43. **[Original]** The apparatus of claim 39, wherein said wood chips comprise generally oblong chips and wherein said one or more paddle assemblies is shaped to align said oblong chips generally transverse to said array of blades in preparation for said flow through said saw assembly.

44. **[Original]** The apparatus of claim 39, wherein said saw assembly generates a wind, and wherein said fence is further shaped to contain said wood chips in opposition generally to said wind.

45. **[Original]** The apparatus of claim 38, wherein said topper assembly comprises:

one or more topper blades disposed upon a shaft and configured to be driven at a topping speed in said first rotational direction.

46. **[Original]** The apparatus of claim 38, further comprising a conveyor assembly providing an incoming flow of said wood chips.

47. **[Original]** The apparatus of claim 38, wherein said chute further comprises:

a chute actuator configured to move said chute relative to said feeder assembly between said engaged position and a disengaged position, said disengaged position characterized by said chute guiding said wood chips away from said feeder assembly;

a chute controller operably connected to said chute actuator; and

a chute load sensor positioned along said chute near said flow of wood chips,

said chute load sensor operably connected to said chute controller, said chute load sensor capable of transmitting at least a normal signal and a fault signal.

48. **[Original]** The apparatus of claim 38, wherein said chute load sensor comprises a metal detector, and said fault signal indicates a metal object in said flow of wood chips.

49. **[Original]** The apparatus of claim 38, wherein said chute actuator in response to a fault signal moves said chute into said disengaged position.

50. **[Original]** The apparatus of claim 38, wherein said dam is stationary relative to said feeder assembly and said trailing dam edge nearly meets said lower chute edge when said chute is in said engaged position.

51. **[Original]** The apparatus of claim 39, wherein said one or more paddle assemblies further comprises an outer paddle face and a leading paddle edge, and wherein said dam is positioned such that:

(a) said outer paddle face nearly meets said inner dam face; and

(b) said leading paddle edge nearly meets said leading dam edge.

52. **[Withdrawn]** An apparatus for reducing the size of wood chips, comprising:

a saw assembly having an array of blades disposed in spaced-apart relation upon a shaft and configured to be driven at a cutting speed in a first rotational direction, said shaft defining a shaft interference zone;

a feeder assembly configured to direct a flow of said wood chips along an endless feeder path, said endless feeder path comprising one or more either straight or curved segments, said feeder path passing into and through said array of blades, said feeder assembly defining a feeder zone at least partially intersecting said array of blades;

a topper assembly positioned proximate said feeder path, said topper assembly located upstream of said saw assembly relative to said feeder path, said topper assembly configured to reduce the height of said flow of said wood chips such that said flow of wood chips does not tend to extend into said shaft interference zone, said topper assembly defining a topper zone;

said apparatus reducing said wood chips into a plurality of cut chips.

53. **[Withdrawn]** The apparatus of claim 52, wherein said saw assembly is positioned such that said shaft interference zone nearly intersects tangentially with said feeder zone.

54. **[Withdrawn]** The apparatus of claim 52, wherein said topper assembly is positioned such that said topper zone nearly intersects tangentially with said feeder zone.

55. **[Withdrawn]** The apparatus of claim 52, wherein said saw assembly further comprises an array of spacers disposed upon said shaft, said spacers positioned alternately between said array of blades.

56. **[Withdrawn]** The apparatus of claim 52, wherein said feeder assembly comprises one or more paddle assemblies configured to be driven along said feeder path at a feeder speed in a direction generally opposing said first rotational direction,

each of said one or more paddle assemblies defining an array of slots therethrough, positioned to accept insertion of said array of blades.

57. **[Withdrawn]** The apparatus of claim 56, wherein said one or more paddle assemblies comprise a series of like paddle members.

58. **[Withdrawn]** The apparatus of claim 56, wherein each of said one or more paddle assemblies comprises:

a scoop portion shaped to cradle said wood chips; and

a fence portion shaped to contain said wood chips during said flow through said array of blades.

59. **[Withdrawn]** The apparatus of claim 56, wherein said wood chips comprise generally oblong chips and wherein said one or more paddle assemblies is shaped to align said oblong chips generally transverse to said array of blades in preparation for said flow through said saw assembly.

60. **[Withdrawn]** The apparatus of claim 56, wherein said saw assembly generates a wind, and wherein said fence is further shaped to contain said wood chips in opposition generally to said wind.

61. **[Withdrawn]** The apparatus of claim 52, wherein said topper assembly comprises:

one or more topper blades disposed upon a shaft and configured to be driven at a topping speed in said first rotational direction.

62. **[Withdrawn]** The apparatus of claim 52, further comprising a conveyor assembly providing an incoming flow of said wood chips.

63. **[Withdrawn]** A control system for a wood chip reducing apparatus, said apparatus having a saw assembly configured to be driven in a first rotational direction under a normal operating condition, a feeder assembly configured to be driven in a direction generally opposing said first rotational direction under a normal operating condition, a topper assembly configured to be driven in a direction generally opposing said first rotational direction under a normal operating condition, a chute disposed in an engaged position to guide a flow of wood chips toward said feeder assembly, and a chute actuator configured to move said chute relative to said feeder assembly between said engaged position and a disengaged position, said system comprising:

a saw load sensor operably connected to said saw assembly and configured to sense a saw load;

a feeder load sensor operably connected to said feeder assembly and configured to sense a feeder load;

a topper load sensor operably connected to said topper assembly and configured to sense a topper load;

a chute load sensor operably connected to said chute and configured to sense a chute load; and

a master controller operably connected to each of said respective sensors, each of said respective sensors capable of transmitting at least a normal signal and a fault signal.

64. **[Withdrawn]** The control system of claim 63, wherein said master controller, in response to a fault signal from any of said respective sensors received at a start time:

directs said chute actuator to move said chute into said disengaged position, said disengaged position characterized by said chute guiding said wood chips away from said feeder assembly; and

directs said feeder assembly to drive said feeder assembly in said first rotational direction.

65. **[Withdrawn]** The control system of claim 64, wherein said master controller, in response to a normal signal from each of said respective sensors received at an end time following said start time:

directs said chute actuator to move said chute into said engaged position; and

directs said feeder assembly to drive said feeder assembly in a direction generally opposing said first rotational direction.

66. **[Withdrawn]** The control system of claim 63, wherein said master controller, in response to a fault signal from any of said respective sensors received at a first time:

directs said feeder assembly to pause said feeder assembly;

directs said saw assembly to pause said saw assembly; and

directs said topper assembly to pause said topper assembly.

67. **[Withdrawn]** The control system of claim 66, wherein said master controller, in response to a normal signal from each of said respective sensors received at a second time following said first time, directs said feeder assembly, saw assembly, and topper assembly, respectively, to return to said normal operating condition..

68. **[Original]** A method of reducing the size of wood chips, comprising:

directing a flow of said wood chips along a feeder path, said feeder path passing into and through a saw assembly, said saw assembly having an array of blades disposed upon a shaft and configured to be driven at a cutting speed in a first rotational direction, said shaft defining a shaft interference zone;

providing a feeder assembly configured to direct said flow of said wood chips along said feeder path, said feeder assembly defining a feeder zone at least partially intersection said array of blades; and

positioning a topper assembly proximate said feeder path, said topper assembly located upstream of said saw assembly relative to said feeder path, said topper assembly configured to reduce the height of said flow of said wood chips such that said flow of wood chips does not tend to extend into said shaft interference zone, said topper assembly defining a topper zone.

69. **[Original]** The method of claim 68, further comprising:

positioning said saw assembly such that said shaft interference zone nearly intersects tangentially with said feeder zone; and

positioning said topper assembly such that said topper zone nearly intersects tangentially with said feeder zone.

70. **[Original]** The method of claim 68, further comprising:

equipping said feeder assembly with one or more paddle assemblies configured to be driven along said feeder path at a feeder speed in a direction generally opposing said first rotational direction, each of said one or more paddle assemblies defining an array of slots therethrough; and

positioning said slots to accept insertion of said array of blades.

71. **[Original]** The method of claim 70, further comprising:

mounting said one or more paddle assemblies to an endless chain configured to be driven along an endless feeder path about one or more powered rollers, said endless feeder path comprising one or more either straight or curved segments, and said endless path coinciding with said feeder path at least during said flow through said array of blades.

72. **[Original]** The method of claim 70, further comprising:

shaping said one or more paddle assemblies to align said wood chips generally transverse to said array of blades in preparation for said flow through said saw assembly;

providing a scoop portion shaped to cradle said wood chips substantially within each of said one or more paddle assemblies; and

providing a fence portion shaped to contain said wood chips substantially within each of said one or more paddle assemblies during said flow through said array of blades.

73. **[Original]** The method of claim 68, further comprising:

equipping said topper assembly with one or more topper blades disposed upon a shaft and configured to be driven at a topping speed in said first rotational direction.

74. **[Original]** The method of claim 68, further comprising:

providing a chute disposed in an engaged position to guide said flow of said wood chips toward said feeder assembly, said chute comprising a floor and a lower chute edge.

75. **[Original]** The method of claim 74, further comprising:

providing a chute actuator configured to move said chute relative to said feeder assembly between said engaged position and a disengaged position, said disengaged position characterized by said chute guiding said wood chips away from said feeder assembly;

operably connecting a chute controller to said chute actuator;

locating a chute load sensor along said chute near said flow of wood chips, said chute load sensor capable of transmitting at least a normal signal and a fault signal; and

operably connecting said chute load sensor to said chute controller.

76. **[Original]** The method of claim 75, further comprising:

said chute actuator moving said chute into said disengaged position in response to a fault signal.

77. **[Original]** The method of claim 68, further comprising:

positioning a dam between said chute and said feeder assembly, said dam shaped to urge said wood chips toward said feeder assembly; and

shaping said dam to include an inner face oriented toward said feeder assembly, said inner face shaped to nearly coincide with said feeder zone, a trailing dam edge, and a leading dam edge.

78. **[Original]** The method of claim 77, further comprising:

mounting said dam in a stationary location relative to said feeder assembly;

positioning said dam such that said trailing dam edge nearly meets said lower chute edge when said chute is in said engaged position.

79. **[Original]** The method of claim 77, wherein said one or more paddle assemblies comprises an outer paddle face and a leading paddle edge, said method further comprising:

positioning said dam such that said outer paddle face nearly meets said inner dam face; and

positioning said dam such that said leading paddle edge nearly meets said leading dam edge.

PROVISIONAL ELECTION OF CLAIMS

The Restriction Requirement: Claims 1-79 were originally filed and pending in the application. In the Office Action, all claims were subject to a restriction requirement. The Examiner has required a restriction for examination purposes between the following claim groups:

Group I. Claims 1-51 and 68-79, drawn to a subcombination apparatus and method for reducing the size of wood chips, having a chute, dam, chute controller and load sensor.

Group II. Claims 52-62, drawn to a subcombination apparatus for reducing the size of wood chips.

Group III. Claims 63-67, drawn to a combination control system for a wood chip reducing apparatus.

Provisional Election of Claims: The Applicant hereby provisionally elects without traverse to prosecute the claims of Group I (Claims 1-51 and 68-79) for prosecution on the merits. The Applicant expressly reserves the right to file divisional applications or take such other appropriate measures deemed necessary to protect the inventions recited in the remaining claims.

CONCLUSION

After entry of the provisional election, claims 1-51 and 68-79 have been elected by the Applicant for prosecution on the merits. The Applicant respectfully submits that all the pending claims of the application are patentable.

The undersigned is available at (404) 881-7821 if the Examiner has any questions or requests that may be resolved by telephone in order to expedite the examination of this application.

The Applicant does not believe any request for extension of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. In the event, however, that additional extensions of time are necessary to allow the consideration of this paper, such extensions are hereby petitioned-for under 37 CFR § 1.136(a) and any fee required therefor (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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Shana Moore